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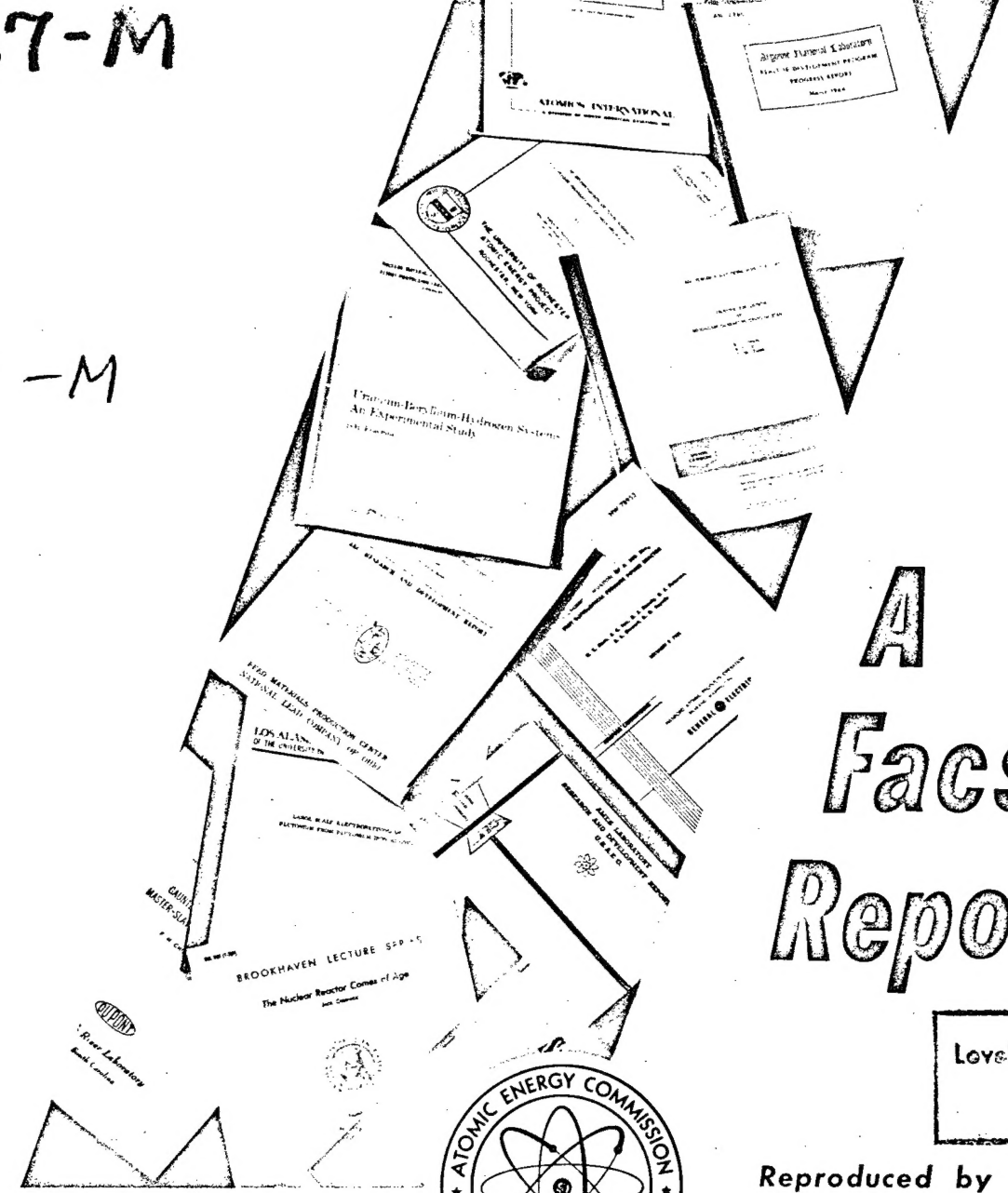

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UC-80
REACTOR TECHNOLOGY
TID-4500 (17th Ed.)

SC-4737(M)

THE SANDIA PULSED REACTOR FACILITY (SPRF)

P. D. O'Brien, 5331-3

October 1962

ACKNOWLEDGMENT

The assistance of Lieutenant Commander Frank E. Overbey, Jr., U. S. Navy, Field Command, DASA, Weapons Effects and Test Division, the current DOD SPRF coordinator, in composing Chapter VI and assembling the incorporated illustrative material, is gratefully acknowledged.

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CHAPTER I. INTRODUCTION

The Sandia Pulsed Reactor Facility (SPRF) is a laboratory facility specifically designed for radiation effects experiments which require an intense pulse of fast neutrons and gamma rays. The facility is designed around the Sandia Pulsed Reactor (SPR) and includes four buildings and an outdoor burst site.

The SPR, a bare, cylindrical, enriched-uranium assembly whose design is similar to that of the Los Alamos Scientific Laboratory's Godiva II, is normally operated in the heavily shielded reactor building, which incorporates a shielded pit into which the reactor may be lowered after operation. A paved parking area surrounds the reactor building and provides space for six instrumentation trailers.

The instrumentation building adjacent to the reactor building is reserved exclusively for Sandia Corporation's use in its radiation effects program. Outside the reactor building door is the earth-covered beam catcher building, which houses the heating plant, air compressor, and elevator hydraulic system for the reactor building. A concrete shield connects the reactor and beam catcher buildings and attenuates radiation scattered toward the trailer parking area. The reactor control building, located 200 feet from the reactor building, houses the control console from which the SPR is controlled and monitored, as well as office and laboratory space for Sandia Corporation personnel.

An outdoor burst site, located 2400 feet southeast of the control building, is provided for experiments which are incompatible with the limitations of the reactor building. Cables between the control building and the outdoor burst site permit the reactor to be operated at ground level or, for maximum freedom from scattering influences, atop a 20-foot tower.

The SPR has been in operation since June 1961, and since that time has produced an average of 80 irradiations per month. Modes of operation have ranged from delayed-critical power runs at levels up to 500 watts to superprompt-critical bursts with fission yields up to 2×10^{16}.

CHAPTER II. DESCRIPTION OF FACILITY

Location

The SPRF is located on Sandia Base in Sandia Corporation's Technical Area V, outside the northeast corner of Technical Area III; these areas are about 5 miles south of Sandia Corporation's main laboratory area. Figure 1 shows the location of the reactor complex with respect to other areas of Sandia Base.

Buildings

The SPRF complex is composed of four buildings as seen in Figure 2. These are (1) the Reactor Building, (2) the Instrumentation Building, (3) the Beam Catcher Building, and (4) the Control and Operations Building.

Reactor Building

The reactor building is a poured-concrete structure 30 feet in inside diameter and with a hemispherical ceiling 20 feet high at the inside apex; concrete thickness is uniformly 54 inches. Access to the building is through a 10- by 10-foot metal roll-up door. Around the building is a paved trailer parking area approximately 50 feet wide.

Instrumentation Building

The instrumentation building, located immediately adjacent to the reactor building, houses permanently installed analysis and recording equipment. It is reserved exclusively for the use of Sandia Corporation, and is not available at any time for use by other agencies.

Beam Catcher Building

The beam catcher building is a 15-foot-radius Quonset-type structure located 12 feet from the reactor building in line with the reactor building door. A covered

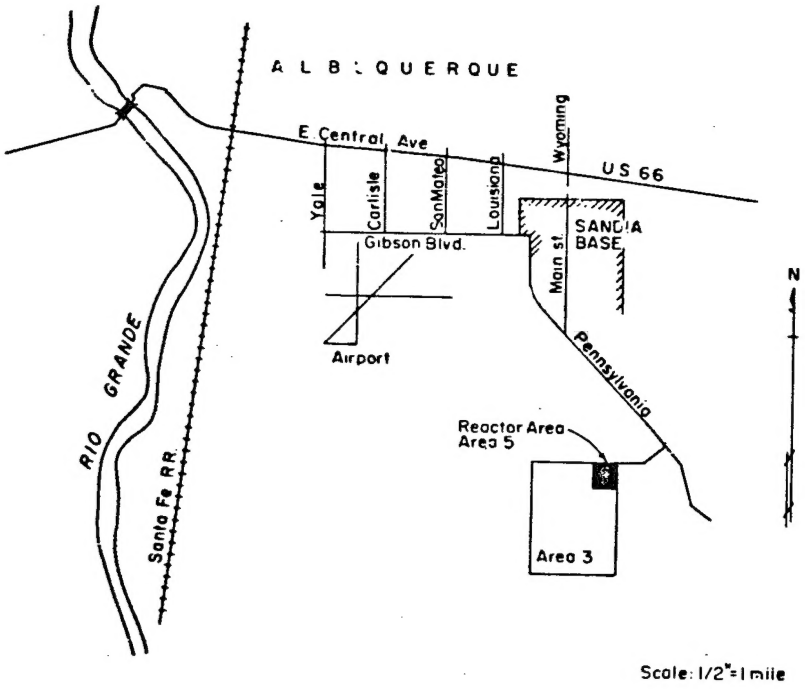


Figure 1. Location of Reactor Complex

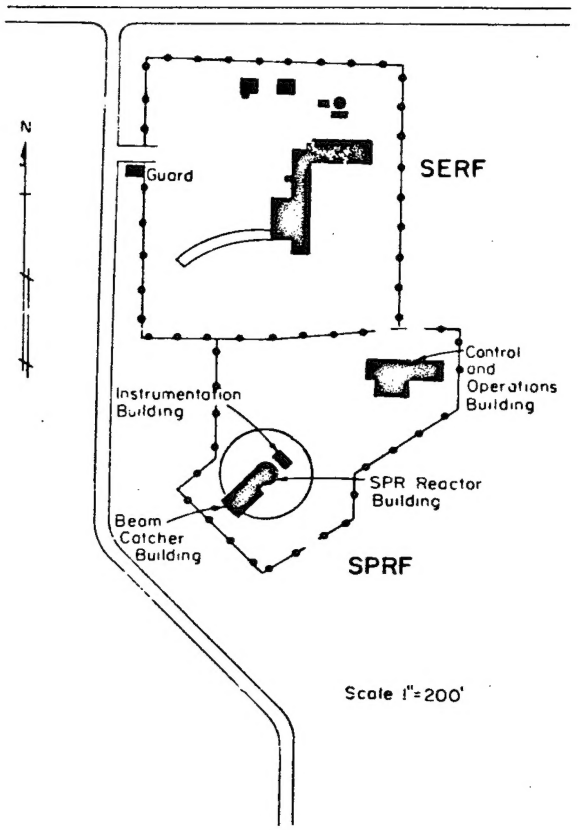


Figure 2. Reactor Complex

concrete structure connects the two buildings and provides radiation shielding in the direction of the trailer area. An earth cover over the beam catcher building provides shielding in the other directions. Access to the area between the reactor and beam catcher buildings is through a 3-foot by 7-foot 4-inch high entry on the west side and through an 11-foot 9-inch by 10-foot 6-inch high entry on the east side. An 8-foot-high fence connected to the reactor building defines an exclusion area which may not be occupied during reactor operation.

Control and Operations Building

The control and operations building, 200 feet northeast of the reactor building, contains the reactor control room and laboratory and office space for Sandia Corporation personnel.

Outdoor Burst Site

The outdoor burst site is centered 2400 feet southeast of the control and operations building. A second set of control cables leads from the console in the control and operations building to a 25-foot-diameter concrete pad at the center of the outdoor site. Adjacent to the pad is a 20-foot-high tower atop which the reactor can be operated during experiments which require minimum scattering. A barbed-wire fence, on a 1725-foot radius about the concrete pad, defines an exclusion area which must be cleared of personnel during reactor operations.

Safety considerations restrict outdoor reactor operation to periods when visual surveillance of the entire exclusion area is possible. In addition, operation is permitted only when wind speed is between 3 and 18 knots. For this reason, outdoor experiments should not be scheduled during the early spring.

CHAPTER III. UTILITIES AND EQUIPMENT

Available Utilities and Connections

The utilities available inside the reactor building include:

Compressed air - 4 cfm at 100 psi
Electrical power - 40 kva, 120-volt single phase AC (15 amps per outlet)
Cold water - 40 gpm at 50 psi
Water drain - 3-inch gravity flow

Locations of these facilities are shown in Figure 3.

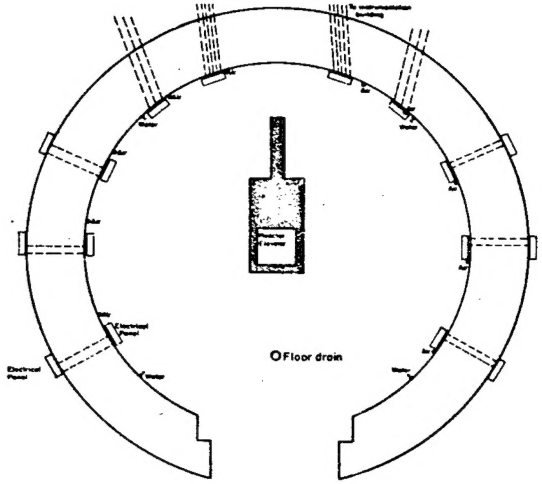


Figure 3. Utilities Location

Around the inside periphery of the reactor building are 10 electrical patch panels. Six of these panels are paired with identical panels outside the reactor building at the trailer parking stations; the other four are connected with panels inside the instrumentation building. Each of the 10 panels provides communication through the reactor building wall and contains the following:

Quantity	Type	Connectors/contacts
10	RG-58B/U coaxial cable	Amphenol No. 31-201
10	RG-11A/U coaxial cable	Amphenol No. 82-90 (70-ohm Type N)*
10	2-conductor, No. 16 stranded shielded cables	Cannon No. XLR-3-32
90	No. 14 signal wires	Buchanan No. 25 pressure blocks with Type TC contacts
10	No. 10 signal wires	
1	Ground buss	
1	Empty 4-inch conduit (15 feet total length)	

*Cable stubs with a UG-94A/U connector (male 70-ohm) on one end and a UG-23B/U connector (female 50-ohm) on the other end are available.

The Buchanan pressure blocks have contacts which will accommodate AWG wire sizes 22 through 10. Telephone cables are also provided for communication from within the building to the outside panel stations. Near the patch panel at each of the six trailer stations, 100-amp, 208-volt, 3-phase electrical power is available through an Appleton AEEA-10476 connector. Also at each trailer station there is a 120-volt single-phase AC supply, terminated in four three-prong convenience outlets.

On the inside wall of the reactor building are four stations for mounting the secondary TV camera available to experimenters; these stations are approximately 10 feet above floor level and are prewired to outside monitoring stations.

At the outdoor burst site, 75 kva of electrical power is available in any combination of 208-volt 3-phase, and 120-volt single-phase service. The 208-volt service is terminated in an Appleton AEEA-10476 connector; the 120-volt service in a Hubbell 5262 connector. No other utilities are available at the outdoor burst site.

Instrumentation cables, which must be provided by the experimenter, may be laid along the ground between an experiment and recording equipment. Recording equipment located within the exclusion area must be wired for remote operation, since under no condition will personnel be permitted inside the area while the reactor is being operated.

CHAPTER IV. REACTOR

Description

The SPR is an unreflected, metallic uranium reactor similar to the Los Alamos Scientific Laboratory's Godiva II (see Figure 4).

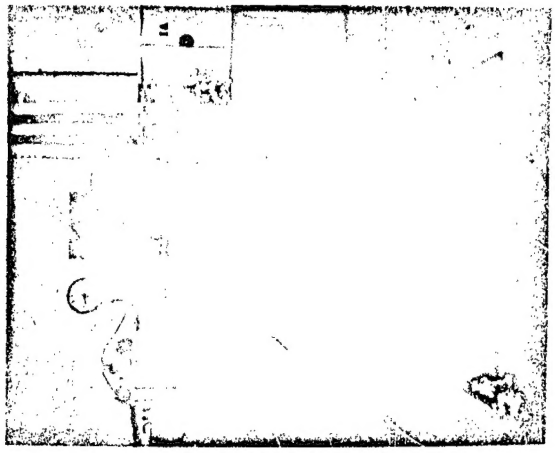
To accommodate a wide range of experimental requirements, the control system is designed to allow operation either in the heavily shielded reactor building or at the outdoor site. A hydraulic elevator in the center of the reactor building permits the SPR to be lowered into a shielded pit, so that access to the building is possible approximately 1/2 hour after a supercritical operation. At the outdoor site the reactor can be operated either at ground level (center of fuel assembly 5 feet above ground) or on a 20-foot tower (center of fuel assembly 25 feet above ground).

The perforated aluminum screen which surrounds the fuel assembly is 9-1/2 inches in diameter; this defines the closest approach to the reactor for normal experiments. A "glory hole" through the center of the fuel assembly will accommodate experiments up to 5/16 inch in diameter. However, restrictions on the use of the glory hole are such that experimental plans should be discussed in detail with SPRF operations personnel well in advance of the date proposed for the experiment.

Measured Characteristics

Although the SPR is capable of steady-state operation at a maximum power level on the order of 500 watts, it is primarily designed for pulsed operation in the reactivity region of slightly above prompt critical. A standard SPR burst, which produces a 110°C temperature rise in the fuel material, yields 2×10^{16} fissions. The measured characteristics of such a burst are as follows:

1. 50 μsec pulse width at half maximum (41 μsec at outdoor burst site)
2. 3×10^{16} leakage neutrons per burst
3. 2×10^{20} fissions/sec peak fission rate
4. 3×10^{20} neutrons/sec peak leakage rate



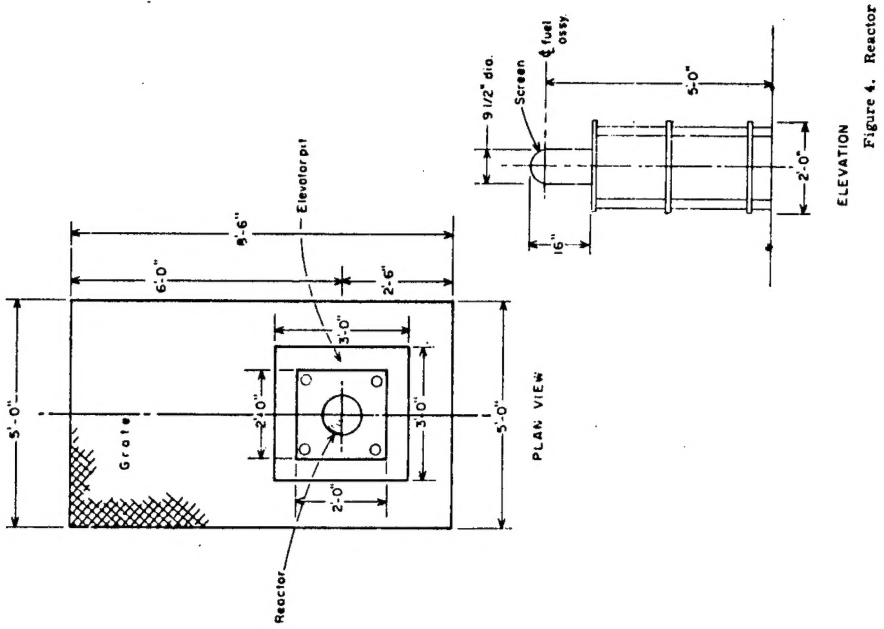


Figure 4. Reactor

5. Radiation at point of closest experimental approach:
   a. 2.3×10^{13} neutrons/cm^2 integrated flux
   b. 2.7×10^{17} neutrons/cm^2 sec peak flux
   c. 5×10^{3} rads (water) from γ's
   d. 6×10^{7} rads (water)/sec from γ's at peak
   e. $\sim 2 \times 10^{14}$ neutrons/cm^2 integrated flux, in the glory hole
6. The neutron energy spectrum of the SPR is assumed to be identical with the Godiva I spectrum, which is shown in Figure 5.

Doses and dose rates can be adjusted downward by moving the experiment away from the reactor or by decreasing the yield of the burst.

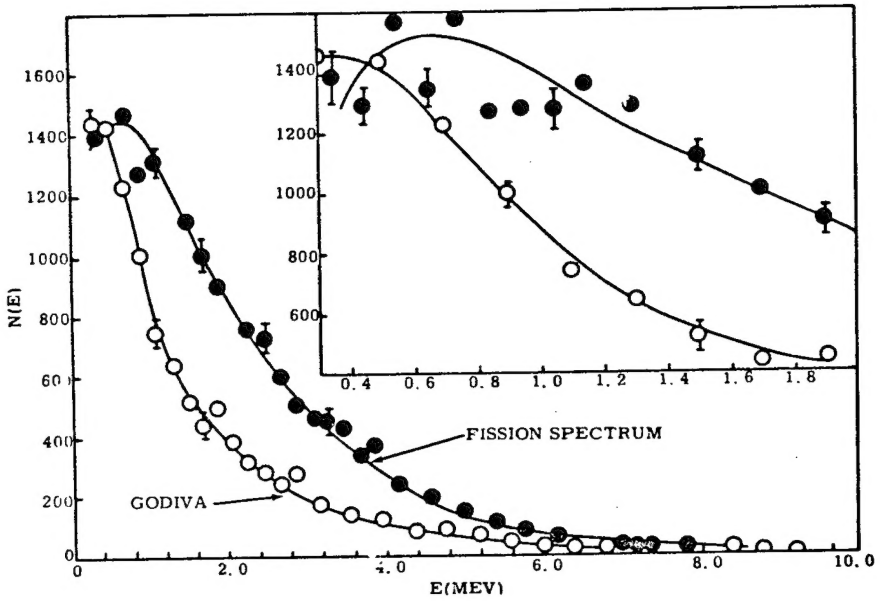


Figure 5. Godiva I Spectrum

Frequency of Operation

For repeated, standard, 2×10^{16} fission bursts, the SPR can be pulsed once approximately every 1-3/4 hours under normal operating conditions. This time includes the delayed critical determination, the waiting period (time necessary for delayed neutron precursors to decay), and the cooling period.

The 2×10^{16} fission standard burst is the largest authorized in the AEC's approval of the SPR operating procedures. This, therefore, determines that the maximum number of bursts possible in a normal working day is five, if the operating schedule allows a cooling period to coincide with the lunch hour. Bursts with fission yields smaller than 2×10^{16} permit shorter waiting periods and, obviously, shorter cooling times than those normally required. The number of bursts possible in a day, then, increases as burst size decreases.

CHAPTER V. OPERATING REGULATIONS

Facility Supervision

Supervision and operation of the SPRF is a responsibility delegated by the Atomic Energy Commission through the President of Sandia Corporation to the SPRF operations staff. The SPR can be operated only by qualified Sandia Corporation personnel, with a minimum crew (for indoor operations) consisting of a reactor supervisor, a reactor operator, and a health physicist. For operations at the outdoor burst site, a second health physicist and a special security guard are required.

The SPR supervisor has over-all responsibility for the operation of the reactor and for the conduct of experiments within the SPRF. He has complete authority to discontinue or require modification of any operation which, in his opinion, endangers the safety of the reactor or of personnel and equipment within the facility. His approval of every experiment is required, both at the time the experimental plan is submitted with the proposal for the use of the SPRF and at the beginning of the experiment.

The SPR operator is directly responsible for the operation of the reactor. His other duties include assisting the reactor supervisor and the health physicist in their duties associated with the safety of the facility. He may, on his own authority, terminate any procedure which appears to be imminently dangerous.

The health physicist is responsible for radiological and toxicological safety of personnel within the facility. As with the reactor operator, the health physicist may, on his own authority, stop any imminently dangerous operation. Specifically, his duties include:

1. Defining areas to which access is restricted because of radiological conditions.

2. Regulating radiation exposures to individuals. Personnel exposures will be limited to 100 mrem per week unless written authorization for larger doses is received from the user's responsible radiological safety official. Address waiver authorization to: Supervisor, Health Physics Section, Organization 3311, Sandia Corporation, New Mexico.

3. Issuing special personal monitoring equipment.

4. Regulating the storage and handling of radioactive materials within the SPRF, and the movement of such materials to areas outside the SPRF.

At the time of their arrival at the SPRF, experimenters will be briefed about special regulations applicable during their experiment. Emergency procedures particularly will be outlined, and the various alarm systems will be demonstrated.

All other aspects of personnel safety, such as the handling of explosive or fissionable materials, are the responsibility of the reactor supervisor, who will assure that the requirements of the pertinent Sandia Corporation instructions are satisfied.

Any person who violates or disregards the instructions of the reactor supervisor or health physicist in matters concerning the safety of personnel or equipment may be barred from further participation in SPRF operations by action of the Reactor Planning Panel.

Equipment and Experimental Requirements

As stated previously, all experimental equipment to be used inside the reactor building must be approved by the reactor supervisor. His sole concern here is for the safety of the reactor and of personnel, both within and outside the facility. No other criteria will be used in evaluating an experiment.

For reactor safety, the principal points of concern are as follows:

1. All equipment to be installed in the immediate vicinity of the reactor shall be structurally stable without support by guy wires, unattached props, etc.

2. No equipment may be installed directly over the fuel assembly unless it is securely fastened to a bridge-type structure which spans the reactor. In general, installation of equipment above the reactor is discouraged.

3. Foils, diodes, and other objects of small reactivity worth may be fastened directly to the aluminum screen around the fuel assembly, provided their size will prevent them from falling through the screen.

4. Equipment designed to maintain a constant liquid level in a container within 1 foot of the fuel assembly must be provided with a level indicator which may be monitored remotely by the reactor operator--for example, by means of the closed-circuit television system.

5. Equipment containing liquids must be designed so that no failure can result in spilling more than 400 gallons on the reactor building floor. This restriction does not apply to the outdoor burst site.

6. Frames or cages used to restrain animals to be irradiated must be designed so that the animals cannot cause a change in the tamping of the reactor. For example, mouse cages very near the fuel assembly should be rigidly mounted so that the mice cannot sway the cage; larger animals must be positively restrained.

7. Remotely controlled, self-propelled mobile equipment must be powered, or at least interlocked. from the special 110-volt, 60-cycle receptacle provided for that purpose. Furthermore, a mechanical stop must be provided to assure that the mobile equipment cannot move toward the reactor when the equipment is placed in its experimental position.

Experiments involving repeated use of the same equipment will be inspected by the SPR operator or supervisor before each supercritical operation. Significant changes in position or operation will be reported to and approved by the SPR supervisor before the reactor is operated.

Restrictions

For safety, access to the control room is normally restricted to individuals actually concerned with the operation of the reactor; any exceptions are at the discretion of the reactor supervisor. Access to the reactor building will be limited to those persons essential to setting up experiments; their exposure times will be determined by the health physicist.

After an experiment has been set up, the exclusion area will be cleared by the health physicist and the reactor operator or supervisor. No personnel will be allowed within the exclusion area until after the burst has been completed and the health physicist has determined that the area is safe for re-entry.

An intercom with portable slave stations is used to advise experimenters of the status of the reactor. A voice countdown is given with times of 12, 5, 2, and 1 minutes followed by 45, 30, 20, 15, 10, 9...2, 1, 0, 1...5 seconds. At zero time the burst rod is inserted, but this is not necessarily the time the burst is initiated: a delay up to 400 milliseconds is common, and, rarely, delays up to several seconds occur. It has been demonstrated that timed initiation is possible, and equipment is now being developed to reduce this delay to a small, constant time.

A burst synchronization pulse is available for triggering oscilloscopes. This is a positive 40-volt, 2-microsecond-wide pulse which occurs approximately 240 microseconds before the peak of a 2×10^{16} fission burst. The timing of this synchronization pulse varies with burst size: for example, the pulse occurs 625 microseconds before the peak of a 1×10^{16} fission burst.

If the experimenter finds it necessary, the countdown may be held for as long as 5 or 10 minutes at any time before the 2-minute point. It is also possible for the experimenter, rather than the reactor operating staff, to give the verbal countdown.

CHAPTER VI. ADMINISTRATION

General

The services of the SPRF have been made available to agencies of the Department of Defense and to private enterprises having AEC or DOD contracts requiring the use of the SPRF. Administration of this aspect of the SPRF employment is a joint function of Sandia Corporation and the Commander, Field Command, Defense Atomic Support Agency (COMFLDCOM DASA).

Coordinators

AEC agencies and contractors needing to visit or use the SPRF are requested to establish dates, security clearances, and purpose with the Sandia Corporation SPRF Coordinator:

Sandia Corporation
Admin. Asst., Org. 5300 Telephone: 256-4411
Sandia Base Ext. 34100
Albuquerque, New Mexico

DOD agencies and contractors needing to visit or use the SPRF are requested to establish dates, security clearances, and purpose with the Commander, Field Command, DASA SPRF Coordinator:

Commander, Field Command DASA
FCWT1 SPRF COORD
Sandia Base Telephone: 256-4411
Albuquerque, New Mexico Ext. 39126

It is emphasized that visitors and users of the SPRF make arrangements for their visit at their earliest convenience and that certified security clearances be received at least 2 working days before the personnel arrive. DOD-certified Secret clearance or equivalent AEC clearance is required for access to the SPRF. In the absence of such arrangements, accomplishment of the visit cannot be assured.

Usage Procedures

Users of the SPRF must submit a Plan of Experiment in duplicate 4 weeks before performing the experiment. Since this plan serves as a reference for determining the inherent safety of the experiment and scheduling precedence, this period of time permits negotiation of modifications which may be necessary to satisfy safety or scheduling conflicts. It is emphasized that no experiment will be performed that in any way presents a hazard to the reactor or the operating personnel. Formats of the Plan of Experiment are enclosed for convenience. It is desired that the plan be "Unclassified" if reasonable, documenting it with proper security classification otherwise.

Upon receipt and approval of the Plan of Experiment, an appropriate contract will be prepared and returned to the potential user for signature. The signed contract must be received by the Sandia Corporation 5 working days before the initial setup of the experimentor. Scheduled reactor time is not considered confirmed until a properly executed contract is received by the Sandia Corporation.

Private enterprises conducting experiments for, and in contract with, either the AEC or the DOD will find it convenient and expeditious to execute a Letter Agreement contract format with the Sandia Corporation.

DOD agencies (laboratories and commands of the uniformed services) are required to execute a Negotiated Contract, Form 1261, augmented with a schedule of specific and general articles deemed applicable and acceptable in consideration of the nature of the services provided by the Sandia Corporation and Field Command, DASA.

Schedules

Every effort will be made to provide the scheduled time requested by the organizations contracting to use the SPRF. Sandia Corporation cannot guarantee exclusive use of the reactor unless the nature of the experiment obviates usage by other groups by reason of lack of available space or the peculiarities of the services desired. In this regard, it is necessary for users to state the desirability of sharing the reactor. If the reactor is shared, the hourly charge will be prorated among all users. In addition, because of unusual circumstances, Sandia's technical programs may require that users conduct their efforts during the second shift operation of the working day. Users should therefore be prepared to alter their program with as little as 1-day notice.

Services

General

The principal services contracted for by the users and Sandia include obtaining a nuclear radiation environment provided by the pulsed reactor. To this end, the supervisors and operators of the reactor will exercise their best efforts, in conformance with the Sandia Corporation SPR Operating Procedures, to provide the desired environment. In addition, users may benefit from advisory counsel concerning the interaction of the reactor operation and the experimenter's configuration. It should not be expected that Sandia personnel will provide scientific, technical, or engineering consulting services or support.

Standard Dosimetry Service

Users of the reactor will be provided dosimetry data from the Sandia Corporation Dosimetry Counting Laboratory. The nuclear reactions, $Pu^{239}(n, f)$, $Np^{237}(n, f)$, $U^{238}(n, f)$, and $S^{32}(n, p)P^{32}$, are used to measure the integrated neutron fluxes (NVT) above the effective energy thresholds of 0.010, 0.7, 1.5, and 3.0 mev, respectively. Bare and cadmium-covered gold $Au^{197}(n, \gamma)Au^{198}$ is used for the thermal neutron ($E \lesssim 0.4$ ev) flux determinations. Glass rod fluorescence is used to determine the gamma dose (rads) contribution of the burst. Users may request any part or all of the standard dosimetry service within the following limitations:

Boron (Bo^{10}) ball (Pu, Np, U fission foils)	1 per burst
Sulfur foils (S^{32})	10 per burst
Gold foils (Au^{197} bare and cadmium covered)	1 set per burst
Glass rods (gamma dose fluorescence)	4 per burst

It is particularly desired that users discriminate as to the necessary dosimetry required of the experiment. Following the experiments all dosimetry data, including personal exposure data, will be forwarded to the user by mail so that it is necessary for a representative of the group to advise the dosimetry laboratory of the address to which the data are to be sent.

Charges

The following schedule of charges will prevail for all users of the SPRF:

Reactor time (exclusive use: reactor operations benefitting one user)

1. Monday through Friday: $60 per hour

2. Saturdays, Sundays, and holidays: $60 per hour (available only if previously scheduled or required by unforseen conditions)

3. On those occasions when SPRF is scheduled for use at the outdoor burst site and inclement weather precludes operation: $60 per hour (8-hour limit)

Reactor time (shared use: reactor operations benefitting two or more users)

1. Charges pro-rated among users

Nonreactor time (setup time and preparation)

1. No charge if work does not interfere with reactor operation

Charges, invoices, and payments are rendered and remitted directly between the Sandia Corporation and the using organizations. All users are required to acknowledge time charges at the SPRF before their departure.

Support

General

Users of the SPRF are encouraged to plan their experiments as thoroughly as possible before arriving at the site. It is highly recommended that organizations using the facility for the first time visit the SPRF in order to more properly plan their experiment.

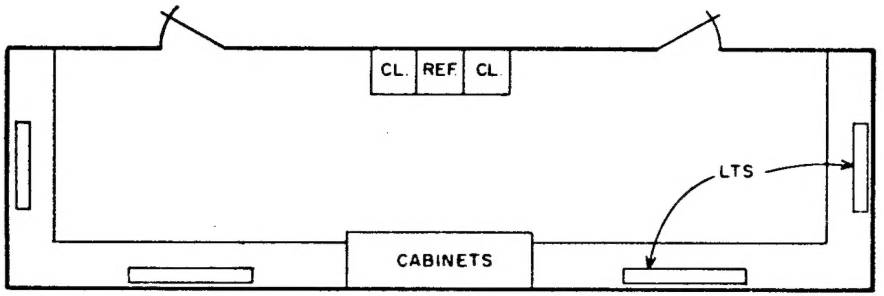
Particulars

Material support to assist the experimenters is arranged for or provided by the SPRF coordinator, usually at no cost to the users. The following support measures are normally available to all users of the facility:

1. Two (2) instrumentation installation trailers

   These units are modified house trailers and include internal lighting, formica-topped work bench spaces, 110-volt AC service outlets distributed on six 20-amp circuits and one 40-amp circuit, with 220-volt AC service available. Each is heated and air-conditioned and furnished with telephone service. One trailer is 27 feet in length and the other is 25 feet, and the interior of each generally conforms to the following sketch.

Floor Plan - Support Trailer



2. One (1) office trailer

   This unit is located at the reactor site to provide office-conference room space and washroom facilities.

Photographic service, special guard and security stowage service, and additional support services from the several government agencies located in the Albuquerque area can be obtained through the SPRF coordinators. In addition, several private concerns are established to provide instrumentation equipment rental, maintenance, and replacements.

Special Equipment

DOD Instrumentation Van -- The Air Force Special Weapons Center located at Kirtland Air Force Base, Albuquerque, can provide an instrumented van at SPRF for DOD agencies and their contractors. AFSWC will provide operating personnel, technical assistance, and expendable supplies necessary for data recording. No charge will be made except for the expendable supplies used. The expendable supplies include film, oscillograph paper, and magnetic tape. There is nothing to preclude the DOD agencies nor contractors from furnishing their own expendables; however, if AFSWC provides the material, reimbursement documentation must be executed before testing.

1. Van Instrumentation

   The instrumentation in the van consists of the following:

   Six (6) Tektronix Type 555 oscilloscopes; each with one Type C-A and one Type L plug-in unit

One (1) CEC Type 5-123 direct writing oscillograph; with 36 Type 7-361 0 to 5000 cps galvanometers

One (1) CEC Type 5-752A seven-channel 0 to 20 kc FM magnetic tape recorder

One (1) Mincom Type CM-114, 14-channel 400 cps to 1.2 mc direct magnetic tape recorder

Additional test and calibration equipment: digital voltmeter, EPUT meter, signal generator, time mark generator galvo amplifiers, and various power supplies

The nature of the experiment to be performed must warrant the need of extensive instrumentation support to request this unit, and sufficient notification is necessary to insure availability.

2. Closed-Circuit TV

A closed-circuit TV monitoring system for use during experiments which require visual monitoring is available to all users of the facility. The Plan of Experiment must include this requirement if needed.

Accommodation and Transportation -- There are several motels, hotels, and restaurants convenient to Sandia Base as well as military accommodations on Sandia Base. The remote location of the SPRF (6 miles south of Sandia Base) makes it necessary for experimenters to provide themselves with automobiles. Reservations for any of these services can be made before arrival or through the SPRF coordinators.

Shipping Instructions -- It is assumed that agencies will make arrangements for the shipment of equipment to Sandia Base in order to include drayage or other local requirements. Address shipments to: Transportation Officer, Sandia Base, Albuquerque, New Mexico, marked for: FCWT/SPRF. To insure proper receipt and handling, shipments are not to be sent to the Sandia Corporation.

Summary

It is emphasized that users of the SPRF announce their visit and submit Security Clearances through their cognizant SPRF coordinator in order to gain access to the reactor site. A plan of the experiment to be conducted must be submitted, and a formal contractual agreement must be executed before performing the experiment. Pre-experimental visits are strongly encouraged. Although support is available in the Albuquerque area, nothing can substitute for advanced planning and complete preparation.

SPRF Plan of Experiment

Plan No. _____ Date: _____

Org. or Unit: _____ Telephone: _____ Ext.: _____

Address: _____ Name: _____
(Responsible Project Official)

Authority: _____
(DOD Contract No., Task No. Proj. No.)

Title/Objective:

Procedures:

Materials to be Exposed: (Dimensions; Weight; Etc.)

Dosimetry Requirements:

Requested Dates for Use in Order of Preference:

a. _____ b. _____ c. _____

No. of Bursts Required: _____ Estimated Reactor Time: _____

Required Exclusive Use: _____ Can Share Reactor: _____

Personnel Information Performing Experiment

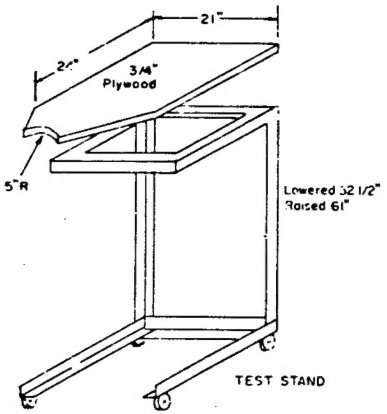
	Name	Mil Grade GS, WB No	Organ. & Tele.	Clearance Type, Level	Date of	Soc. Sec. Number
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

Continued on Reverse Side

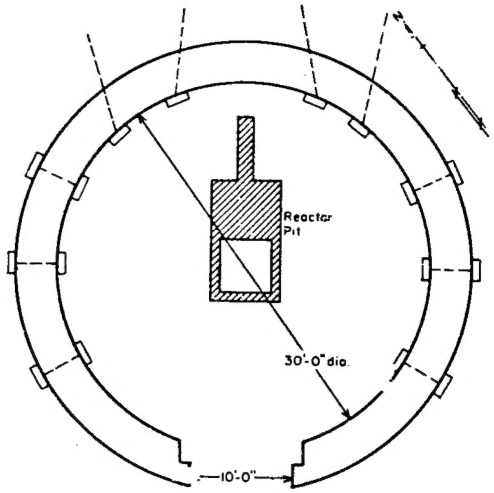
SPRF Plan of Experiment Cont'd

Special Services or Support Required: (Rooms/Auto Reservations; Instruments; Photo; Etc.)

Sketch Set-Up and Space Requirements.



TEST STAND



FLOOR PLAN SPRF

END

Miscellaneous Information:

NOTE: THIS PLAN MUST BE SUBMITTED 4 WEEKS PRIOR TO THE PERFORMANCE OF EXPERIMENT